Chapter 1
Introduction and Summary of Conclusions

Introduction

This Surgeon General's report on tobacco use summarizes current information on risk factors and patterns related to tobacco use among members of four major racial and ethnic minority groups in the United States: African Americans, American Indians and Alaska Natives, Asian Americans and Pacific Islanders, and Hispanics. In addition, this report presents information on national and regional efforts to curtail consumption of tobacco products among members of these four groups. Previous Surgeon General's reports on smoking and health have briefly summarized findings related to one or more of the racial/ethnic groups covered in this report, but this is the first Surgeon General's report to concentrate specifically on the four major racial/ethnic groups in the United States.

Several factors prompted the development of this report. First, the information in this report has never before been compiled in one source. Consequently, policymakers, community leaders, researchers, and public health workers have had difficulty determining the extent of the problem, identifying gaps in information regarding tobacco use among members of the four groups, or being aware of existing tobacco control programs that have demonstrated effectiveness. Thus, incorporating such information into the design and implementation of culturally appropriate services has been difficult.

Second, the four racial/ethnic groups currently constitute about one-fourth of the population of this country, and the Bureau of the Census projects that by 2050 the non-Hispanic white population in the United States will total only 53 percent (Day 1996). Preventing health problems related to tobacco use among the individuals in racial and ethnic groups will be integral to achieving U.S. public health objectives, such as those proposed in *Healthy People 2000: National Health Promotion and Disease Prevention Objectives* (U.S. Department of Health and Human Services [USDHHS] 1991, 1995; National Center for Health Statistics [NCHS] 1994).

This report contributes essential knowledge that must be incorporated into efforts to accomplish the *Healthy People 2000* objectives, particularly these six goals:

- *Objective 3.1.* Reduce coronary heart disease deaths to no more than 100 per 100,000 people. (Age-adjusted baseline: 135 deaths per 100,000 people in 1987.) Among African Americans, reduce the number from 168 to 115 deaths per 100,000 people between 1987 and the year 2000 (Objective 3.1a).

- *Objective 3.2.* Slow the rise in lung cancer deaths to achieve a rate of no more than 42 per 100,000 people. (Age-adjusted baseline: 38.5 deaths per 100,000 people in 1987.) Among African American males, slow the rise from 86.1 to 91 deaths per 100,000 people between 1990 and the year 2000 (Objective 3.2b).

- *Objective 3.4.* Reduce the prevalence of cigarette smoking to no more than 15 percent among people aged 18 years and older. (Baseline: 29 percent in 1987 [31 percent for men and 27 percent for women].) Particular year 2000 objectives include lowering the prevalence of smoking to 18 percent among African Americans (Objective 3.4d), 15 percent among Hispanics (Objective 3.4e), and 20 percent among American Indians and Alaska Natives (Objective 3.4f) and Southeast Asian men (Objective 3.4g).

- *Objective 3.5.* Reduce the initiation of cigarette smoking by children and youths so that no more than 15 percent have become regular cigarette smokers by the age of 20 years. (Baseline: 30 percent of youths had become regular cigarette smokers by the ages of 20–24 years in 1987.)

- *Objective 3.9.* Reduce the prevalence of smokeless tobacco use among males aged 12–24 years to no more than 4 percent. (Baseline: 6.6 percent among males aged 12–17 years in 1988; 8.9 percent among males aged 18–24 years in 1987.) A specific objective is to lower the prevalence of smokeless tobacco use among American Indian and Alaska Native young adults to 10 percent by the year 2000 (Objective 3.9a).

- *Objective 3.18.* Reduce stroke deaths to no more than 20 per 100,000 people. (Age-adjusted baseline: 30.4 deaths per 100,000 people in 1987.) Among African Americans, reduce the number from 52.5 to 27.0 deaths per 100,000 people between 1987 and the year 2000 (Objective 3.18a).

This report of the Surgeon General also responds to the need to thoroughly analyze the smoking-related health status of racial/ethnic groups and to determine if there is a differential risk for tobacco addiction (Chen 1993). High risk might derive from personal characteristics but also from social factors, such as migratory patterns, acculturation, and the tobacco industry's historical involvement in the racial/ethnic communities and targeted advertising and promotion of tobacco products (see Chapter 4).

In addition, this report is needed to document how patterns of health, disease, and illness among people in the various racial/ethnic minority groups differ from patterns in the rest of the U.S. population. These differences reflect the groups' exposure to tobacco products, as well as the heterogeneity of the groups' lifestyles, cultural beliefs and practices, genetic backgrounds, and environmental exposures. This report illustrates how patterns of tobacco use differ among and within the four racial/ethnic groups (Chapter 2). It compares the groups in terms of the incidence and the prevalence of death rates for diseases commonly associated with tobacco use and presents data from case-control and cohort studies whenever possible (Chapter 3).

The health status of members of racial and ethnic groups in this country has also been the focus of previous federal reports, such as the *Health Status of Minorities and Low-Income Groups* (Health Resources and Services Administration [HRSA] 1985), the *Report of the Secretary's Task Force on Black and Minority Health* (USDHHS 1985), and *Chronic Disease in Minority Populations* (Centers for Disease Control and Prevention [CDC] 1994). This Surgeon General's report supports initiatives such as the Hispanic Health and Nutrition Examination Survey in the early 1980s; the Surgeon General's National Hispanic/Latino Health Initiative (Novello and Soto-Torres 1993); special funding initiatives from federal agencies such as the CDC, the National Cancer Institute, the National Institute on Alcohol Abuse and Alcoholism, the National Institute on Drug Abuse, the National Heart, Lung, and Blood Institute (1994), and the National Institute of Mental Health (National Institutes of Health 1993); the Department of Health and Human Services's 1996 *Hispanic Agenda for Action: Improving Services to Hispanic Americans*, and the 1998 President's Race Initiative, which includes special funding initiatives for the CDC, the Indian Health Service, and the Health Resources and Services Administration.

Major Conclusions

1. Cigarette smoking is a major cause of disease and death in each of the four population groups studied in this report. African Americans currently bear the greatest health burden. Differences in the magnitude of disease risk are directly related to differences in patterns of smoking.

2. Tobacco use varies within and among racial/ethnic minority groups; among adults, American Indians and Alaska Natives have the highest prevalence of tobacco use, and African American and Southeast Asian men also have a high prevalence of smoking. Asian American and Hispanic women have the lowest prevalence.

3. Among adolescents, cigarette smoking prevalence increased in the 1990s among African Americans and Hispanics after several years of substantial decline among adolescents of all four racial/ethnic minority groups. This increase is particularly striking among African American youths, who had the greatest decline of the four groups during the 1970s and 1980s.

4. No single factor determines patterns of tobacco use among racial/ethnic minority groups; these patterns are the result of complex interactions of multiple factors, such as socioeconomic status, cultural characteristics, acculturation, stress, biological elements, targeted advertising, price of tobacco products, and varying capacities of communities to mount effective tobacco control initiatives.

5. Rigorous surveillance and prevention research are needed on the changing cultural, psychosocial, and environmental factors that influence tobacco use to improve our understanding of racial/ethnic smoking patterns and identify strategic tobacco control opportunities. The capacity of tobacco control efforts to keep pace with patterns of tobacco use and cessation depends on timely recognition of emerging prevalence and cessation patterns and the resulting development of appropriate community-based programs to address the factors involved.

Preparation of This Report

This report of the Surgeon General was prepared by the Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services, as part of the Department's mandate, under Public Laws 91–222 and 99–252, to report to the U.S. Congress current information about the health effects of tobacco use.

The report was produced with the assistance of experts in the behavioral, epidemiological, medical, and public health fields. Initial background papers were produced by more than 25 scientists who were selected because of their expertise and familiarity with the topics covered in this report. Their various contributions were summarized into five major chapters that were reviewed by 28 peer reviewers. The entire manuscript was then sent to 43 scientists and experts, who reviewed it for its scientific integrity. Subsequently, the report was reviewed by various institutes and agencies within the Department of Health and Human Services.

Terms Related to Race and Ethnicity

Race and ethnicity are classifications currently used for various purposes, such as tracking morbidity and mortality statistics, defining group characteristics (as is done in many studies and by most federal and state agencies, including the U.S. Bureau of the Census), and exploring the health characteristics of individuals and groups. Most extant data consider four *racial* groups in the United States (African American or black, American Indian and Alaska Native, Asian American and Pacific Islander, and white) as well as two *ethnic* categories (Hispanic and non-Hispanic).

Specific choices have been made in selecting the labels used to identify individuals who share a given race, tradition, culture, or ethnicity. These labels differ somewhat from those published in the Race and Ethnic Standards for Federal Statistics and Administrative Reporting, more commonly known as Directive 15 (U.S. Department of Commerce 1978). This directive presents rules for classifying persons into four racial groups (American Indian or Alaskan Native, Asian or Pacific Islander, black, and white) and two ethnic categories (Hispanic origin and not of Hispanic origin). The labels in this report were chosen to reflect current preferred use by many members of each group and researchers as well as to more clearly identify members of a given group. Nevertheless, because of differences in the way in which ethnicity has been ascertained in the various studies, some overlap and misclassification may exist, particularly with regard to Hispanic origin (for example, Hispanics of African background may be classified as African Americans, or Hispanics may be classified as non-Hispanic whites). In addition, the terms used in this report do not always precisely depict the racial/ethnic group studied (for instance, this report consistently uses the term *American Indian and Alaska Native*, even when describing studies of *Native Americans*—a category that in some cases excludes Alaska Natives). Moreover, the terms used here do not reflect the fact that some studies were conducted in the 48 contiguous states and may exclude a substantial number of Alaska Natives and Native Hawaiians. Throughout this report, the following labels and definitions are used, with the referents basically agreeing with those of Directive 15:

- *African American.* Individuals who trace their ancestry of origin to Sub-Saharan Africa.
- *American Indian and Alaska Native.* Persons who have origins in any of the original peoples of North America and who maintain that cultural identification through self-identification, tribal affiliation, or community recognition.
- *Asian American and Pacific Islander.* Individuals who trace their background to the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.
- *Hispanic.* Persons who trace their background to one of the Spanish-speaking countries in the Americas or to other Spanish cultures or origins.
- *White.* Persons who have origins in any of the original peoples of Europe, North Africa, or the Middle East. Throughout most of this report, white refers to non-Hispanic whites.

Finally, this report avoids using such labels as *people of color, special populations, multicultural populations,* or *diverse populations* because some people consider them inaccurate, improper, or pejorative. Without question, not everyone will agree with the terms used in this report because no universally accepted labels exist. These terms will continue to evolve with time.

Terms Related to Tobacco Use

Throughout this report, *prevalence of smoking cessation* is used to describe the proportion of persons who had ever smoked and who were former smokers at the time of survey (this term is used instead of *quit ratio* or *quit rate*). Definitions related to smoking status—ever smokers, never smokers, current smokers, and former smokers—are presented later in this report (see Chapter 2).

Demographic Characteristics of the Four Racial/Ethnic Minority Groups

In the 1990 U.S. Census, the four racial and ethnic groups that are the focus of this report accounted for 24 percent of the population, or more than 60 million people (Table 1). African Americans were the largest group, followed by Hispanics, Asian Americans and Pacific Islanders, and American Indians and Alaska Natives. Although these groups constitute a minority of the total population, their overall growth of 32 percent between 1980 and 1990 far exceeds the 4-percent increase among whites (Table 1). Asian Americans and Pacific Islanders had the largest growth during that period, followed by Hispanics, American Indians and Alaska Natives, and African Americans. Because of this rapid growth, racial and ethnic populations tend to be younger than the white majority.

Demographic characteristics vary significantly when the four racial and ethnic groups are compared with whites, according to 1990 census data (Table 2; within-group variability is masked because all subgroups that make up a given racial or ethnic group are considered together) (U.S. Bureau of the Census 1993c). The median ages of Hispanics (25.6 years), as well as American Indians and Alaska Natives (26.9 years), are lower than those of the other racial/ethnic group members. Hispanics have the lowest proportion of high school graduates (49.8 percent) of all groups and the highest proportion of people who speak a language other than English (77.8 percent). Asian Americans and Pacific Islanders (38.4 percent) as well as Hispanics (39.4 percent) have the largest proportions of individuals who feel they do not speak English "very well." They also have the highest proportions of foreign-born persons. American Indians and Alaska Natives, African Americans, and Hispanics have significantly higher levels of unemployment and poverty as well as substantially lower household incomes than Asian Americans, Pacific Islanders, or whites. In all four groups, a majority of members live in urban environments; however, American Indians and Alaska Natives have the lowest proportion of urban residents.

Differences in the demographic characteristics of each of the various racial and ethnic groups are related to variations in national background and immigration history. Asian Americans and Pacific Islanders, for example, include approximately 32 different ethnic and

Table 1. U.S. population distribution, by race/ethnicity and Hispanic origin and percentage change, 1980–1990

	1980 (in millions)	1990 (in millions)	% Change
White*	180.26	188.42	4
African American*	26.10	29.28	12
Hispanic	14.61	21.90†	50
Asian American and Pacific Islander	3.50	7.23	107
American Indian and Alaska Native‡	1.42	2.02	42

*Excludes persons of Hispanic origin.
†Excludes 3.5 million Hispanics in Puerto Rico.
‡Includes Eskimos and Aleuts.
Source: U.S. Bureau of the Census 1983, 1993c.

Table 2. Selected demographic characteristics for the U.S. population, by race/ethnicity, 1990

Characteristic	African Americans	American Indians/ Alaska Natives	Asian Americans/ Pacific Islanders	Hispanics	Whites*
Population	29,930,524	2,015,143	7,226,986	21,900,089	188,424,773
Women (percentage)	52.8	50.4	51.2	49.2	51.3
Median age (years)	28.2	26.9	30.1	25.6	34.9
Foreign born (percentage)	4.9	2.3	63.1	35.8	3.3
Education (percentage of persons aged ≥25 years)					
High school education	63.1	65.5	77.5	49.8	79.1
Bachelor's degree or higher	11.4	9.3	36.6	9.2	22.1
English-language ability (percentage of persons aged ≥5 years)					
Speak a language other than English	6.3	23.8	73.3	77.8	5.7
Do not speak English "very well"	2.4	9.2	38.4	39.4	1.8
Number of persons per family	3.5	3.6	3.7	3.8	3.0
Percentage of families with own children aged <18 years	56.5	60.7	59.5	64.5	45.2
Employment status† (percentage of persons aged ≥16 years)					
Employed	62.7	62.1	67.5	67.5	65.3
Unemployed	12.9	14.4	5.3	10.4	5.0
Percentage of employed persons aged ≥16 years in a managerial/professional occupation	18.1	18.3	30.6	14.1	28.5
Household income in 1989 ($)					
Median	19,758	20,025	36,784	24,156	31,672
Mean	25,872	26,602	46,695	30,301	40,646
Per capita income in 1989 ($)	8,859	8,328	13,638	8,400	16,074
Poverty rate (percentage)					
Families	26.3	27.0	11.6	22.3	7.0
Persons	29.5	30.9	14.1	25.3	9.2
Urban residents (percentage)	87.2	56.0	95.4	91.4	70.9

*Excludes persons of Hispanic origin. The population figures for African Americans in Tables 1 and 2 are different because the population cited in Table 2 includes African Americans of Hispanic origin, while the African American population cited in Table 1 excludes persons of Hispanic origin.

†These figures do not include several categories of people who were not in the civilian labor force for various reasons, such as students, housewives, retired workers, seasonal workers in an off season who were not looking for work, institutionalized persons, and persons doing only incidental unpaid family work (less than 15 hours during the reference week).

Source: U.S. Bureau of the Census 1993a,c.

national groups and speak nearly 500 languages and dialects (Chen 1993). They trace their background to areas as diverse as Mongolia to the north, Indonesia and the South Pacific Islands to the south, India to the west, and Japan to the east. Hispanics include individuals who trace their background to the original settlers of large areas in what is now the Southwest United States as well as recent immigrants from any of the 18 Spanish-speaking countries in Latin America. The American Indian and Alaska Native population in the United States is likewise composed of a richly diverse group of indigenous cultures of indigenous cultures, over half of whom do not live on a reservation (U.S. Bureau of the Census 1993c). More than 500 federally recognized tribes and an additional 100 nonfederally recognized tribes are concentrated primarily in 25 reservation states (U.S. Bureau of the Census 1992a). American Indians and Alaska Natives continue to speak more than 150 languages. (For additional information, see U.S. Bureau of the Census reports on Asian Americans and Pacific Islanders [1993a], Hispanics [1993b], and American Indians and Alaska Natives [1993c].) Most African Americans in the United States can trace their ancestry to territories that include the modern states of Benin, Burkina Faso (formerly Upper Volta), Cameroon, the Congo Republic, Côte d'Ivoire (Ivory Coast), the Democratic Republic of the Congo (formerly Zaire), Gabon, Gambia, Ghana, Guinea, Liberia, Nigeria, Senegal, Sierra Leone, and Togo (Ploski and Williams 1989). The mode of entry for practically all Africans who entered the United States in the seventeenth, eighteenth, and nineteenth centuries (until 1865) was as slaves (see Chapter 4 for further historical discussion). Many recent immigrants came from the Caribbean islands and Sub-Saharan Africa. This report excludes data on the 3.5 million residents of Puerto Rico as well as data on residents of other territories and associated states of the United States; however, many of the issues discussed in this report are relevant to these individuals because they have been influenced by the events taking place in the 50 states.

Over the next 50 years, the population of the four groups is expected to increase dramatically, reaching close to one-half of the country's population by the year 2050 (Table 3), according to estimates from the U.S. Bureau of the Census (1992b). These estimates underscore the need to develop appropriate interventions to avert disturbing tobacco addiction patterns in this large segment of the population.

Table 3. Estimated percentage distribution of the U.S. population, by race/ethnicity and Hispanic origin, 1990–2050

	Non-Hispanic				
Year	African American	Asian American/ Pacific Islander	American Indian*	White	Hispanic
1990	11.8	2.8	0.7	75.7	9.0
1995	12.1	3.5	0.7	73.6	10.1
2000	12.3	4.2	0.8	71.6	11.1
2005	12.6	4.9	0.8	69.6	12.2
2010	12.8	5.5	0.8	67.6	13.2
2020	13.3	6.8	0.9	63.9	15.2
2050	15.0	10.1	1.1	52.7	21.1

*Includes Eskimos and Aleuts.
Source: U.S. Bureau of the Census 1992b.

Effects of Racial/Ethnic Background on Health

Extensive research has been conducted on the relationship between health and race/ethnicity (see, for example, Harwood 1981; Polednak 1989; Braithwaite and Taylor 1992; Young 1994). Published reports of these studies tend to show different rates of illness across racial/ethnic groups. Some of these differences may be explained by variations in each group's beliefs and attitudes, traditional health-related practices, normative behaviors, social conditions, levels of access to high-quality health care, experiences with discrimination and racism, living environments, competing causes of death, and genetic backgrounds. Genetic factors may contribute to certain differences among groups of people; however, culture, degree of acculturation, and socioeconomic factors are probably far more significant determinants of health status in the United States (Freeman 1993; Adler et al. 1994).

Culture is a broad concept (Kroeber and Kluckhohn 1963)—its influence encompasses all aspects of daily life, including beliefs and practices about health and illness as well as norms that dictate behaviors. Most contemporary societies include many different cultures, which may be defined by historical, geographic, economic, social, and political elements (Helman 1985). The United States has always been a nation of immigrants and coexisting cultures.

Acculturation—the process of learning the values, beliefs, norms, and traditions of a new culture (Marín 1992)—allows individuals to make choices and to learn of new worldviews, while keeping their original views (biculturalism) or modifying their initial perspectives to be more consonant with those of the new culture (assimilation). In multicultural societies such as the United States, acculturation occurs among immigrants (as they learn the host culture) as well as among individuals born in the United States (as they learn the culture of immigrants). Despite the significance of acculturation's link with human behavior, few studies have focused on how acculturation might affect the health status and behavior of ethnic groups in the United States. Part of the problem has been the difficulty in designing appropriate measuring instruments (Marín 1992), although recent research has begun to assess the role that acculturation plays in determining the health status of members of U.S. racial/ethnic groups (Pérez-Stable 1994; Vega and Amaro 1994; Williams and Collins 1995).

Socioeconomic characteristics, which are powerful determinants of health and disease (USDHHS 1985, 1991; Liberatos et al. 1988; HRSA 1991; Williams and Collins 1995), differ markedly among the racial and ethnic groups of the United States (Table 2). Levels of income and education may directly and indirectly affect the health status of individuals (Council on Ethical and Judicial Affairs 1990; Weissman et al. 1991). Income, for example, often is a determinant of access to health care as well as of the quantity and quality of health care available. Persons with low incomes, regardless of race or ethnicity, are more likely to be uninsured (American College of Physicians 1990), to encounter delays in seeking or receiving care or to be denied care (Tallon 1989), to rely on hospital clinics and emergency rooms for health services (NCHS 1985), and to receive substandard care (Burstin et al. 1992). Level of education may influence health beliefs and behaviors, which determine whether and how individuals seek health care, make treatment choices, and comply with treatment suggestions. Because the literature reviewed in this report has often failed to consider the role of socioeconomic factors in the health status of members of racial/ethnic groups, understanding the significance of the results is difficult. Nevertheless, these published reports indicate that access to health care and the type of care received are partly determined by the race and ethnicity of the patient and that members of minority groups are less likely than whites to receive adequate care (e.g., Blendon et al. 1989; CDC 1989; Todd et al. 1993; Williams and Collins 1995).

The information summarized in this report reflects the role of race, ethnicity, and culture in shaping tobacco use among members of the four population groups. Unfortunately, currently available methods do not help delineate the role of acculturation, socioeconomic conditions, and societal problems such as racism, prejudice, and discrimination (e.g., Osborne and Feit 1992; Freeman 1993; Pappas 1994). Nevertheless, efforts were made here to discern the possible role of these variables in explaining tobacco use among racial/ethnic minority group members.

Chapter Conclusions

Following are the specific conclusions for each chapter in this report.

Chapter 2. Patterns of Tobacco Use Among Four Racial/Ethnic Minority Groups

1. In 1978–1995, the prevalence of cigarette smoking declined among African American, Asian American and Pacific Islander, and Hispanic adults. However, among American Indians and Alaska Natives, current smoking prevalence did not change for men from 1983 to 1995 or for women from 1978 to 1995.
2. Tobacco use varies within and among racial/ethnic groups; among adults, American Indians and Alaska Natives have the highest prevalence of tobacco use; African American and Southeast Asian men also have a high prevalence of smoking. Asian American and Hispanic women have the lowest prevalence.
3. In all racial/ethnic groups discussed in this report except American Indians and Alaska Natives, men have a higher prevalence of cigarette smoking than women.
4. In all racial/ethnic groups except African Americans, men are more likely than women to use smokeless tobacco.
5. Cigarette smoking prevalence increased in the 1990s among African American and Hispanic adolescents after several years of substantial decline among adolescents of all four racial/ethnic minority groups. This increase is particularly striking among African American youths, who had the greatest decline of the four groups during the 1970s and 1980s.
6. Since 1978, the prevalence of cigarette smoking has remained strikingly high among American Indian and Alaska Native women of reproductive age and has not declined as it has among African American, Asian American and Pacific Islander, and Hispanic women of reproductive age.
7. Declines in smoking prevalence were greater among African American, Hispanic, and white men who were high school graduates than they were among those with less formal education. Among women in these three groups, education-related declines in cigarette smoking were less pronounced.
8. Educational attainment accounts for only some of the differences in smoking behaviors (current smoking, heavy smoking, ever smoking, and smoking cessation) between whites and the racial/ethnic minority groups discussed in this report. Other biological, social, and cultural factors are likely to further account for these differences.
9. Compared with whites who smoke, smokers in each of the four racial/ethnic minority groups smoke fewer cigarettes each day. Among smokers, African Americans, Asian Americans and Pacific Islanders, and Hispanics are more likely than whites to smoke occasionally (less than daily).
10. The data in general suggest that acculturation influences smoking patterns in that individuals tend to adopt the smoking behavior of the current broader community; however, the exact effects of acculturation on smoking behavior are difficult to quantify because of limitations on most available measures of this cultural learning process.

Chapter 3. Health Consequences of Tobacco Use Among Four Racial/Ethnic Minority Groups

1. Cigarette smoking is a major cause of disease and death in each of the four racial/ethnic groups studied in this report. African Americans currently bear the greatest health burden. Differences in the magnitude of disease risk are directly related to differences in patterns of smoking.
2. Although lung cancer incidence and death rates vary widely among the nation's racial/ethnic groups, lung cancer is the leading cause of cancer death for each of the racial/ethnic groups studied in this report. Before 1990, death rates from malignant neoplasms of the respiratory system increased among African American, Hispanic, and American Indian and Alaska Native men and women. From

1990 through 1995 death rates from respiratory cancers decreased substantially among African American men, leveled off among African American women, decreased slightly among Hispanic men and women, and increased among American Indian and Alaska Native men and women.

3. Rates of tobacco-related cancers (other than lung cancer) vary widely among members of racial/ethnic groups, and they are particularly high among African American men.

4. The effect of cigarette smoking (as reflected by biomarkers of tobacco exposure) on infant birth weight appears to be the same in African American and white women. As reported in previous Surgeon General's reports, cigarette smoking increases the risk of delivering a low-birth-weight infant.

5. No significant racial/ethnic group differences have been consistently demonstrated in the relationship between smoking and infant mortality or sudden infant death syndrome (SIDS); cigarette smoking has been associated with increased risk of SIDS and remains a probable cause of infant mortality.

6. Future research is needed and should focus on how tobacco use affects coronary heart disease, stroke, cancer, chronic obstructive pulmonary disease, and other respiratory diseases among members of racial/ethnic groups. Studies also are needed to determine how the health effects of smokeless tobacco use and exposure to environmental tobacco smoke vary across racial/ethnic minority groups.

7. Persons of all racial/ethnic backgrounds are vulnerable to becoming addicted to nicotine, and no consistent differences exist in the overall severity of addiction or symptoms of addiction across racial/ethnic groups.

8. Levels of serum cotinine (a biomarker of tobacco exposure) are higher in African American smokers than in white smokers for similar levels of daily cigarette consumption. Further research is needed to clarify the relationship between smoking practices and serum cotinine levels in U.S. racial/ethnic groups. Variables such as group-specific patterns of smoking behavior (e.g., number of puffs per cigarette, retention time of tobacco smoke in the lungs), rates of nicotine metabolism, and brand mentholation could be explored.

Chapter 4. Factors That Influence Tobacco Use Among Four Racial/Ethnic Minority Groups

1. The close association of tobacco with significant events and rituals in the history of many racial/ethnic communities and the tobacco industry's long history of providing economic support to some racial/ethnic groups—including employment opportunities and contributions to community groups and leaders—may undermine prevention and control efforts.

2. The tobacco industry's targeted advertising and promotion of tobacco products among members of these four U.S. racial/ethnic groups may undermine prevention and control efforts and thus lead to serious health consequences.

3. The high level of tobacco product advertising in racial/ethnic publications is problematic because the editors and publishers of these publications may omit stories dealing with the damaging effects of tobacco or limit the level of tobacco-use prevention and health promotion information included in their publications.

4. Although much of the original research on psychosocial factors that influence tobacco use reflects general processes that may apply to racial/ethnic populations, documenting such generalizability requires further research.

5. The initiation of tobacco use and early tobacco use among members of the various racial/ethnic minority groups seem to be related to numerous categories of variables—such as sociodemographic, environmental, historical, behavioral, personal, and psychological—although the predictive power of these categories or of specific risk factors is not known with certainty because of the paucity of research.

6. Cigarette smoking among members of the four racial/ethnic groups is associated with depression, psychological stress, and environmental factors such as advertising and promotion and peers who smoke, as is also the case in the general population. The role of these factors in tobacco use among members of these racial/ethnic groups deserves attention by researchers and persons who develop smoking prevention and cessation programs.

Chapter 5. Tobacco Control and Education Efforts Among Members of Four Racial/ Ethnic Minority Groups

1. More research is needed on the effect of culturally appropriate programs to reduce tobacco use among racial/ethnic minority groups. Interventions should be language appropriate; addressing psychosocial characteristics such as depression, stress, and acculturation may increase the acceptance of programs by members of racial/ethnic groups.

2. To be culturally appropriate, tobacco control programs must reflect the targeted racial/ethnic group's cultural values, consider the group's psychosocial correlates of tobacco use, and use strategies that are acceptable and credible to members of the group. Culturally competent program staff must be aware and accepting of cultural differences, be able to assess their own cultural values, be conscious of intercultural dynamics when persons of different cultures interact, be aware of a racial/ethnic group's relevant cultural characteristics, and have the skills to adapt to cultural diversity.

3. Numerous strategies are needed to control tobacco use among racial/ethnic youths: restricting minors' access to tobacco products, establishing culturally appropriate school-based programs, and designing mass media efforts geared to young people's interests, attitudes, expectations, and norms. Recent provisions of the Synar Amendment, designed to prevent minors' access to tobacco products, and the FDA regulations aimed at reducing the access to and appeal of tobacco products to young people are intended to reduce tobacco use among all youth, including members of racial/ethnic minority groups.

4. Members of racial/ethnic groups are less likely than the general population to participate in smoking cessation groups and to receive cessation advice from health care providers. Barriers to ethnic group participation include limited cultural competence of health care providers and a lack of transportation, money, and access to health care.

5. Available data indicate that racial/ethnic groups support smoking restrictions, such as increasing cigarette excise taxes, banning cigarette advertisements, restricting access to cigarette vending machines, raising the legal age of purchase, prohibiting sponsorship of events by tobacco companies, and establishing clean indoor air regulations. Additional research is needed to evaluate how best to build on this base of public opinion support to strengthen existing tobacco prevention and control programs within racial/ethnic communities.

6. Prevention and cessation efforts in racial/ethnic communities are limited by underdeveloped tobacco control infrastructures and low levels of resources for research, program development, and program dissemination. Greater resources are needed in racial/ethnic minority communities to build tobacco control infrastructures and to develop initiatives.

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Chapter 2
Patterns of Tobacco Use Among Four Racial/Ethnic Minority Groups

Introduction

Over the past 15 years, the prevalence of cigarette smoking has generally declined among adult African Americans, Asian Americans and Pacific Islanders, and Hispanics. Nevertheless, rates of cigarette smoking and other tobacco use are still high among certain racial/ethnic minority groups compared with among the overall population, particularly American Indians and Alaska Natives. Designing more successful public health efforts to reduce tobacco-related diseases and deaths in racial/ethnic populations requires greater understanding of these racial/ethnic patterns of tobacco use. This chapter summarizes how smoking behaviors such as current tobacco use, cigarette consumption, and quitting behavior among adults vary within and among racial/ethnic groups. In addition, for all racial/ethnic groups, the prevalence of cigarette smoking is examined for two groups of special interest, women of reproductive age and adolescents.

The purpose of this chapter is to summarize in one source the reported trends and patterns of tobacco use among members of the four racial/ethnic minority groups, by gender, age, and level of education. In addition, newly compiled information is presented on smoking patterns by birth cohort (based on year of birth) for African Americans and Hispanics. The relationship between racial/ethnic group and education as predictors of cigarette smoking is explored, and data on cigarette brand preference and exposure to environmental tobacco smoke are presented. The influence of acculturation on smoking behavior is examined among the two fastest growing immigrant groups to the United States—Asian Americans and Pacific Islanders and Hispanics. Although reports of the effects of acculturation vary widely in the literature, it is an important correlate of behavior despite limitations in conceptualization, operationalization, and measurement.

The analyses presented in this chapter incorporate data from national and state-specific population-based surveys of adults, national population-based surveys of adolescents, and local and international surveys of various adult and adolescent populations. The national studies cited in this chapter include the National Health Interview Survey (NHIS) (1978–1995), which garners yearly data on cigarette smoking; the Behavioral Risk Factor Surveillance System (BRFSS) (1987–1992), which collects information on behavioral risks among adults in the United States; the Adult Use of Tobacco Survey, which has been conducted periodically since 1964; the Hispanic Health and Nutrition Examination Survey (HHANES), which gathered demographic and cigarette-smoking information from Hispanics between 1982 and 1984; the Monitoring the Future (MTF) surveys, which have been conducted in high schools annually since 1975; and the Teenage Attitudes and Practices Survey (TAPS), conducted in 1989 and 1993. Appendix 1 describes these major data sources, and Appendix 2 details the various measures of tobacco use. Appendix 3 presents data on patterns of cigarette use among whites that can be compared with the racial/ethnic group data presented in the chapter. Appendix 4 presents supplementary data on patterns of tobacco use among African Americans, and Appendix 5 describes how the authors validated one of the analytic techniques used to retrospectively estimate smoking prevalence.

The analyses in this chapter update and expand on previous Surgeon General's reports that describe tobacco use among racial/ethnic groups; most of these previous reports have focused on cigarette smoking only among African Americans (U.S. Department of Health, Education, and Welfare [USDHEW] 1979; U.S. Department of Health and Human Services [USDHHS] 1983, 1988, 1989, 1990a). For some analyses reported here, small sample sizes limit the precision of the estimates. The patterns described in the text generally use point estimates, but confidence intervals presented in most tables can be referred to when the precision of the estimates needs to be defined.

Long-Term Tobacco-Use Trends and Behavior Among Racial/Ethnic Minority Groups

African Americans

Prevalence of Cigarette Smoking

The overall prevalence of cigarette smoking among African Americans declined from 37.3 percent in 1978–1980 to 26.5 percent in 1994–1995, according to data from the NHIS (Table 1) (National Center for Health Statistics [NCHS], public use data tapes, 1978–1995). Between 1978 and 1995, the prevalence of current smoking among African American men fell from 45.0 to 31.4 percent, whereas the prevalence among African American women fell from 31.4 to 22.7 percent. Although the prevalence of smoking among African American men remained consistently higher than that among African American women, the gender differential in smoking prevalence narrowed over the 18-year period. Similar patterns have been observed since 1965 among both African Americans and whites (Figure 1) (Centers for Disease Control and Prevention [CDC] 1994c).

Magnitudes of decline in smoking prevalence also differed by age (Table 1). Between 1978 and 1995,

Table 1. Percentage of adult African Americans who reported being current cigarette smokers,* overall and by gender, age, and education, National Health Interview Surveys, United States, 1978–1995 aggregate data

	1978–1980†		1983–1985†		1987–1988†		1990–1991†		1992–1993†		1994–1995†	
Characteristic	%	±CI‡	%	±CI	%	±CI	%	±CI	%	±CI	%	±CI
Total	37.3	1.7	35.3	1.4	32.3	1.1	27.9	1.1	27.0	1.5	26.5	1.7
Gender												
Men	45.0	2.5	40.2	2.2	37.6	1.8	34.1	1.8	32.4	2.5	31.4	2.7
Women	31.4	1.8	31.4	1.7	28.0	1.4	22.9	1.3	22.6	1.6	22.7	1.9
Age (years)												
18–34	38.7	2.8	34.7	2.1	32.0	1.7	26.0	1.7	22.1	2.2	21.0	2.4
35–54	43.9	2.4	42.2	2.7	37.2	1.9	35.6	1.9	35.9	2.7	34.2	3.0
≥55	26.5	2.4	27.8	2.4	26.1	2.0	20.0	2.0	22.3	2.8	23.5	2.8
Education§												
Less than high school	36.4	2.5	38.7	2.1	36.3	2.0	33.1	2.2	34.2	3.4	34.8	3.3
High school	42.1	2.6	39.4	2.8	38.8	2.1	33.5	1.9	31.9	2.7	31.3	3.1
Some college	36.7	5.5	34.8	3.4	33.0	2.7	28.9	2.8	27.5	3.2	26.4	3.7
College	34.6	6.7	28.4	4.3	19.7	3.2	17.8	2.9	18.2	4.2	16.7	3.8

*Excludes African Americans who reported they were of Hispanic origin. For 1978–1991, current cigarette smokers include persons who reported smoking at least 100 cigarettes in their lives and who reported at the time of survey that they currently smoked. For 1992–1995, current smokers include persons who reported smoking at least 100 cigarettes in their lives and who reported at the time of survey that they currently smoked every day or on some days.

†1978, 1979, and 1980 data were combined; 1983 and 1985 data were combined; 1987 and 1988 data were combined; 1990 and 1991 data were combined; 1992 and 1993 data were combined; and 1994 and 1995 data were combined.

‡95% confidence interval.

§Includes persons aged 25 years and older.

Source: National Center for Health Statistics, public use data tapes, 1978–1995.

African Americans 18–34 years of age experienced the largest decline in smoking prevalence, from 38.7 to 21.0 percent, whereas African Americans aged 55 years and older experienced the smallest decline, from 26.5 to 23.5 percent. In the years 1978–1980, persons 18–34 years of age were nearly 1.5 times more likely to smoke than those 55 years of age or older. By 1994 and 1995, however, because of the differential decline in smoking prevalence, the prevalence of smoking among younger adults was as low as that among their older counterparts.

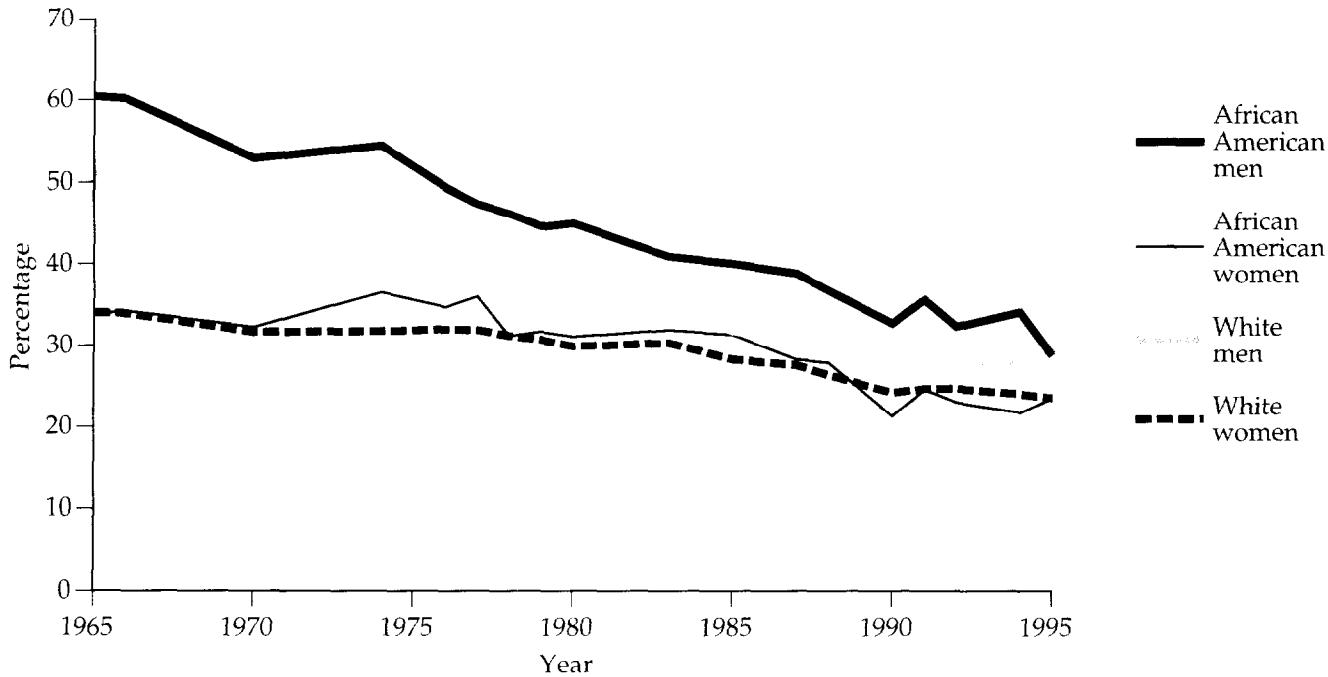
The prevalence of cigarette smoking among African Americans decreased most among college graduates (Table 1)—a pattern that has been found in the nation as a whole (Pierce et al. 1989). Among African American college graduates, the smoking prevalence fell from 34.6 percent in 1978–1980 to 16.7 percent in 1994–1995. In comparison, smoking prevalence among African Americans with less than 12 years of education was 36.4 percent in 1978–1980 and 34.8 percent in 1994–1995. In the years 1978–1980, the prevalence of smoking varied little by level of education. However, by 1994 and 1995, an inverse relationship had emerged. As the level of education increased, the prevalence of cigarette smoking decreased.

Number of Cigarettes Smoked Daily

The percentage of African American smokers who reported that they were light smokers (smoking fewer than 15 cigarettes per day) increased from 56.0 percent in 1978–1980 to 63.9 percent in 1994–1995, according to the NHIS data (Table 2) (NCHS, public use data tapes, 1978–1993). This upward trend was found across all sociodemographic groups, with men, persons less than 55 years of age, and college graduates experiencing the largest increases in light smoking.

Throughout the 18-year period, African American women who smoked were consistently more likely than their male counterparts to smoke fewer than 15 cigarettes per day (Table 2). African American smokers 18–34 years of age were slightly more likely than

Figure 1. Trends in the prevalence of cigarette smoking among African American and white men and women, National Health Interview Surveys, United States, 1965–1995



Source: National Center for Health Statistics, public use data tapes, 1965, 1966, 1970, 1974, 1976, 1977, 1978, 1979, 1980, 1983, 1985, 1987, 1988, 1990, 1991, 1992, 1993, 1994, and 1995.

Table 2. **Percentage of adult African American smokers* who reported smoking <15, 15–24, or ≥25 cigarettes per day, overall and by gender, age, and education, National Health Interview Surveys, United States, 1978–1995 aggregate data**

Characteristic	1978–1980†		1983–1985†		1987–1988†		1990–1991†		1992–1993†		1994–1995†	
	%	±CI‡	%	±CI	%	±CI	%	±CI	%	±CI	%	±CI
Total												
<15 cigarettes	56.0	2.2	55.4	2.5	58.8	2.0	60.6	2.2	63.3	3.0	63.9	3.5
15–24 cigarettes	33.6	2.2	35.2	2.4	32.8	1.9	31.9	2.1	31.1	2.8	28.4	3.2
≥25 cigarettes	10.4	1.7	9.4	1.6	8.4	1.2	7.5	1.2	5.6	1.3	7.6	2.1
Gender												
Men												
<15 cigarettes	50.4	3.2	52.3	3.8	53.2	3.1	55.2	3.1	59.3	4.5	61.1	5.1
15–24 cigarettes	37.1	3.6	36.3	3.4	37.0	3.1	35.6	3.1	34.4	4.2	28.6	4.7
≥25 cigarettes	12.5	2.3	11.4	2.6	9.8	1.7	9.2	1.9	6.3	2.0	10.3	3.7
Women												
<15 cigarettes	62.2	3.2	58.6	3.1	65.0	2.7	67.1	2.6	67.9	3.8	67.1	4.2
15–24 cigarettes	29.8	2.8	34.1	2.8	28.2	2.4	27.5	2.5	27.4	3.6	28.3	4.0
≥25 cigarettes	8.1	2.3	7.3	1.5	6.8	1.3	5.4	1.3	4.7	1.5	4.6	1.7
Age (years)												
18–34												
<15 cigarettes	59.8	3.6	56.9	3.7	64.1	2.9	67.2	3.4	69.5	5.1	70.0	5.5
15–24 cigarettes	31.7	3.3	34.4	3.3	28.5	2.7	26.6	3.2	25.5	4.8	23.3	5.3
≥25 cigarettes	8.5	2.3	8.7	2.3	7.4	1.7	6.2	1.8	5.1	2.1	6.7	2.7
35–54												
<15 cigarettes	51.2	3.4	51.0	4.1	52.1	3.1	54.6	3.4	60.4	4.3	58.9	5.2
15–24 cigarettes	35.6	3.7	37.7	3.9	37.7	3.1	36.9	3.2	33.2	4.1	32.2	4.8
≥25 cigarettes	13.2	2.7	11.3	2.5	10.2	1.7	8.5	1.9	6.3	2.1	8.9	3.6
≥ 55												
<15 cigarettes	55.3	5.4	60.4	5.6	59.1	5.2	60.4	4.8	59.0	6.5	66.7	6.6
15–24 cigarettes	34.8	5.6	32.3	5.9	33.6	5.0	31.9	4.7	36.3	6.4	27.3	6.0
≥25 cigarettes	9.9	4.8	7.4	3.1	7.3	2.5	7.7	2.7	4.7	2.7	6.0	3.8

*Excludes African Americans who reported they were of Hispanic origin. For 1978–1991, current cigarette smokers include persons who reported smoking at least 100 cigarettes in their lives and who reported at the time of survey that they currently smoked. For 1992–1995, current smokers include persons who reported smoking at least 100 cigarettes in their lives and who reported at the time of survey that they currently smoked every day or on some days.

†1978, 1979, and 1980 data were combined; 1983 and 1985 data were combined; 1987 and 1988 data were combined; 1990 and 1991 data were combined; 1992 and 1993 data were combined; and 1994 and 1995 data were combined.

‡95% confidence interval.

their older counterparts to be light smokers (except for the years 1983–1985). An association between education and light smoking became apparent in 1990–1991. In 1990 and beyond, among smokers, education was directly related to the proportion of smokers who smoked fewer than 15 cigarettes per day. As the level of education increased, the proportion smoking lightly also increased.

Throughout the 18-year period, the prevalence of heavy smoking (smoking 25 or more cigarettes per

Table 2. Continued

Characteristic	1978–1980†		1983–1985†		1987–1988†		1990–1991†		1992–1993†		1994–1995†	
	%	±CI‡	%	±CI	%	±CI	%	±CI	%	±CI	%	±CI
Education§												
Less than high school												
<15 cigarettes	53.1	4.0	56.0	4.1	57.3	3.1	57.3	3.4	57.7	5.5	56.1	6.0
15–24 cigarettes	33.5	3.6	32.7	4.0	32.7	3.3	33.5	3.3	33.9	5.4	32.5	5.6
≥25 cigarettes	13.4	3.1	11.4	3.1	10.0	2.2	9.2	2.3	8.4	3.0	11.5	4.5
High school												
<15 cigarettes	53.9	4.7	52.4	4.4	58.3	3.6	59.0	3.7	62.7	4.6	64.0	5.7
15–24 cigarettes	34.9	4.8	40.6	4.1	33.2	3.5	34.8	3.6	33.4	4.4	29.2	4.9
≥25 cigarettes	11.2	3.6	6.9	2.1	8.5	1.9	6.2	1.6	3.9	1.8	6.8	3.9
Some college												
<15 cigarettes	49.7	7.5	48.6	6.6	56.3	4.7	60.9	5.6	63.4	7.0	63.0	8.4
15–24 cigarettes	37.6	6.1	37.4	6.8	34.7	4.7	32.2	5.5	31.0	6.8	32.2	8.2
≥25 cigarettes	12.7	5.9	14.1	5.1	9.0	3.1	6.9	2.9	5.6	3.1	4.9	2.5
College												
<15 cigarettes	57.1	10.2	50.9	9.7	55.2	9.6	65.0	9.3	74.7	10.0	79.0	9.9
15–24 cigarettes	34.1	9.0	35.6	10.9	38.2	9.6	24.9	7.9	20.6	9.5	18.1	9.5
≥25 cigarettes	8.8	5.5	13.5	9.4	6.7	3.4	10.1	6.7	4.7	4.0	2.9	3.5

§Includes persons aged 25 years and older.
Source: National Center for Health Statistics, public use data tapes, 1978–1995.

day) was higher among African American men than among women, and it was higher among respondents 35–54 years of age than among their younger and older counterparts (Table 2). No clear patterns emerged in the relationship between education and the prevalence of heavy smoking.

Quitting Behavior

Between 1978 and 1995, the overall prevalence of smoking cessation (the percentage of persons who have ever smoked 100 cigarettes and who have quit smoking) among African Americans increased from 26.8 to 35.4 percent, according to data from the NHIS (Table 3) (NCHS, public use data tapes, 1978–1995). The prevalence of cessation generally increased over time across all gender, age, and education categories. The largest increases were among persons 55 years of age or older and college graduates.

Throughout the 18-year period, the prevalence of smoking cessation remained higher among persons 55 years of age or older than among their younger counterparts (Table 3). Since 1983, college graduates have been generally more likely to quit smoking than persons with less than 16 years of education.

Attempts to quit smoking during the previous year and short-term success at quitting were measured in a multivariate analysis of the 1991 NHIS data (CDC 1993). After statistical control was made for gender, age, education, and poverty status, African Americans were more likely than whites to stop smoking for at least one day during the previous year. However, African Americans who had stopped smoking for at least one day were less likely than whites to have quit for at least one month.

Data from the National Cancer Institute (NCI) Supplement of the 1992–1993 Current Population Survey (CPS) indicate that among adults who were daily smokers one year before being surveyed, African Americans who had tried to quit for at least one day were slightly more likely than whites to have relapsed to daily smoking. African Americans were also slightly more likely than whites to have become occasional smokers (i.e., to be smoking on only some days) and slightly less likely to have quit smoking (Table 4) (U.S. Bureau of the Census, public use data tapes,

Table 3. Percentage of adult African American ever smokers who have quit,* overall and by gender, age, and education, National Health Interview Surveys, United States, 1978–1995 aggregate data

Characteristic	1978–1980†		1983–1985†		1987–1988†		1990–1991†		1992–1993†		1994–1995†	
	%	±CI‡	%	±CI	%	±CI	%	±CI	%	±CI	%	±CI
Total	26.8	1.7	30.0	1.8	31.8	1.6	36.1	1.8	37.0	2.4	35.4	2.6
Gender												
Men	28.7	2.0	33.5	2.6	33.9	2.3	36.8	2.5	39.1	3.5	34.9	3.7
Women	24.5	2.5	26.2	2.5	29.4	2.1	35.2	2.4	34.5	3.1	35.9	3.4
Age (years)												
18–34	17.9	2.8	20.2	2.8	18.8	2.3	21.0	2.6	23.7	4.6	19.6	4.1
35–54	27.7	2.6	29.5	2.9	33.1	2.6	35.2	2.6	33.2	3.4	33.1	4.0
≥55	42.3	4.0	47.0	3.6	49.2	3.0	57.3	3.6	56.8	4.4	54.7	4.4
Education§												
Less than high school	32.6	2.7	32.7	2.5	35.0	2.5	38.0	3.3	40.0	4.2	36.8	4.0
High school	24.4	3.4	28.8	3.6	27.3	2.7	32.4	2.6	33.4	3.8	31.6	4.3
Some college	32.4	5.9	35.0	4.7	36.6	4.0	38.1	4.4	39.0	5.3	37.3	6.3
College	29.8	8.6	37.0	6.9	50.2	6.1	51.3	6.1	48.7	8.7	51.1	8.5

*Excludes African Americans who reported they were of Hispanic origin. The prevalence of cessation is the percentage of ever smokers who are former smokers. Former smokers are persons who reported smoking at least 100 cigarettes in their lives and who reported at the time of survey that they were not smoking, and ever smokers include current and former smokers.
†1978, 1979, and 1980 data were combined; 1983 and 1985 data were combined; 1987 and 1988 data were combined; 1990 and 1991 data were combined; 1992 and 1993 data were combined; and 1994 and 1995 data were combined.
‡95% confidence interval.
§Includes persons aged 25 years and older.
Source: National Center for Health Statistics, public use data tapes, 1978–1995.

1992–1993). Some data suggest that African Americans may be more likely than whites to be dependent on nicotine (see Chapter 3, Table 18, in the section Racial/Ethnic Differences in Self-Reported Nicotine Dependence; Royce et al. 1993), although a report by Andreski and Breslau (1993) suggests the opposite. African Americans appear to have comparatively limited access to preventive health services, including smoking cessation services (USDHHS 1988; Hymowitz et al. 1991).

Women of Reproductive Age

Between 1978 and 1995, the prevalence of current smoking among African American women of reproductive age (18–44 years) declined from 35.4 to 23.4 percent, according to data from the NHIS (Table 5) (NCHS, public use data tapes, 1978–1995). Women who were college graduates experienced an overwhelming decline in smoking prevalence, from 37.0 to 10.8 percent, whereas women with less than a high school education (<12 years) experienced a slight increase in the prevalence of current smoking, from 41.1 to 46.3 percent.

In the years 1978–1980, the prevalence of smoking varied little by level of education. However, by 1994 and 1995, a marked inverse relationship between smoking and educational level had emerged. As the level of education increased, the prevalence of smoking decreased. This inverse relationship has also been found in other studies of women of reproductive age (CDC 1991a, 1994b).

National data on tobacco use and pregnancy are available from the 1967 and 1980 National Natality

Table 4. Current cigarette smoking status among persons* who reported that they were daily smokers 1 year before being surveyed, Current Population Survey National Cancer Institute Supplement, 1992–1993

Currrent smoking status	African Americans		American Indians/ Alaska Natives		Asian Americans/ Pacific Islanders		Hispanics		Whites		Total	
	%	±CI†	%	±CI	%	±CI	%	±CI	%	±CI	%	±CI
Smoke every day; did not try to quit for at least one day during the previous year	59.8	1.5	62.8	5.5	57.8	4.4	59.8	2.3	63.1	0.5	62.5	0.5
Smoke every day; did try to quit for at least one day during the previous year	29.7	1.4	28.9	5.1	32.0	4.2	28.5	2.1	26.0	0.5	26.6	0.4
Smoke on some days	5.6	0.7	3.7	2.1	4.8	1.9	5.6	1.1	3.7	0.2	4.0	0.2
Do not smoke cigarettes; abstinent for 1–90 days	2.2	0.5	1.8	1.5	2.5	1.4	2.5	0.7	3.4	0.2	3.2	0.2
Do not smoke cigarettes; abstinent for 91–364 days	2.7	0.5	2.8	1.9	2.9	1.5	3.6	0.9	3.8	0.2	3.7	0.2

*Aged 18 years and older; N = 44,272.
†95% confidence interval.
Source: U.S. Bureau of the Census, public use data tapes, 1992–1993.

Surveys, the 1982 and 1988 National Surveys of Family Growth, the 1985 and 1990 NHISs, the 1988 National Maternal and Infant Health Survey (NMIHS), and the 1992–1993 National Pregnancy and Health Survey. Furthermore, since 1989, national trend data on smoking and pregnancy have become readily available from information collected on the revised U.S. Standard Certificate of Live Birth, which is included as part of U.S. final natality statistics compiled each calendar year (NCHS 1992, 1993, 1994; Ventura et al. 1994).

Among the earliest sources of national trend data on smoking during pregnancy were the National Natality Surveys, which were administered to a national sample of married mothers of live infants born in 1967 and 1980 (Kleinman and Kopstein 1987; USDHHS 1989). Among African American mothers <20 years of age, smoking rates remained virtually constant over time at about 27 percent. The smoking prevalence among African American mothers aged ≥20 years declined from 33 percent in 1967 to 23 percent in 1980. The National Survey of Family Growth collected data in 1982 and 1988 on the smoking behavior of females 15–44 years of age during their most recent pregnancy. In 1982, 29.2 percent of African American women reported smoking during their most recent pregnancy, compared with 23.4 percent in 1988 (Pamuk and Mosher 1992; Chandra 1995). More recent data from U.S. final natality statistics indicate that smoking rates for African Americans during pregnancy declined from 17.1 percent in 1989 to 10.6 percent in 1995 (Table 6). Smoking rates declined for African American teenaged mothers from 1989 through 1995 but remained virtually unchanged for African American adult mothers aged 20–49 years during those years (NCHS 1992, 1993, 1994; Ventura et al. 1994, 1995, 1996). In general, African American adolescent mothers were less likely to have smoked than mothers 20–49 years